FIG. 1

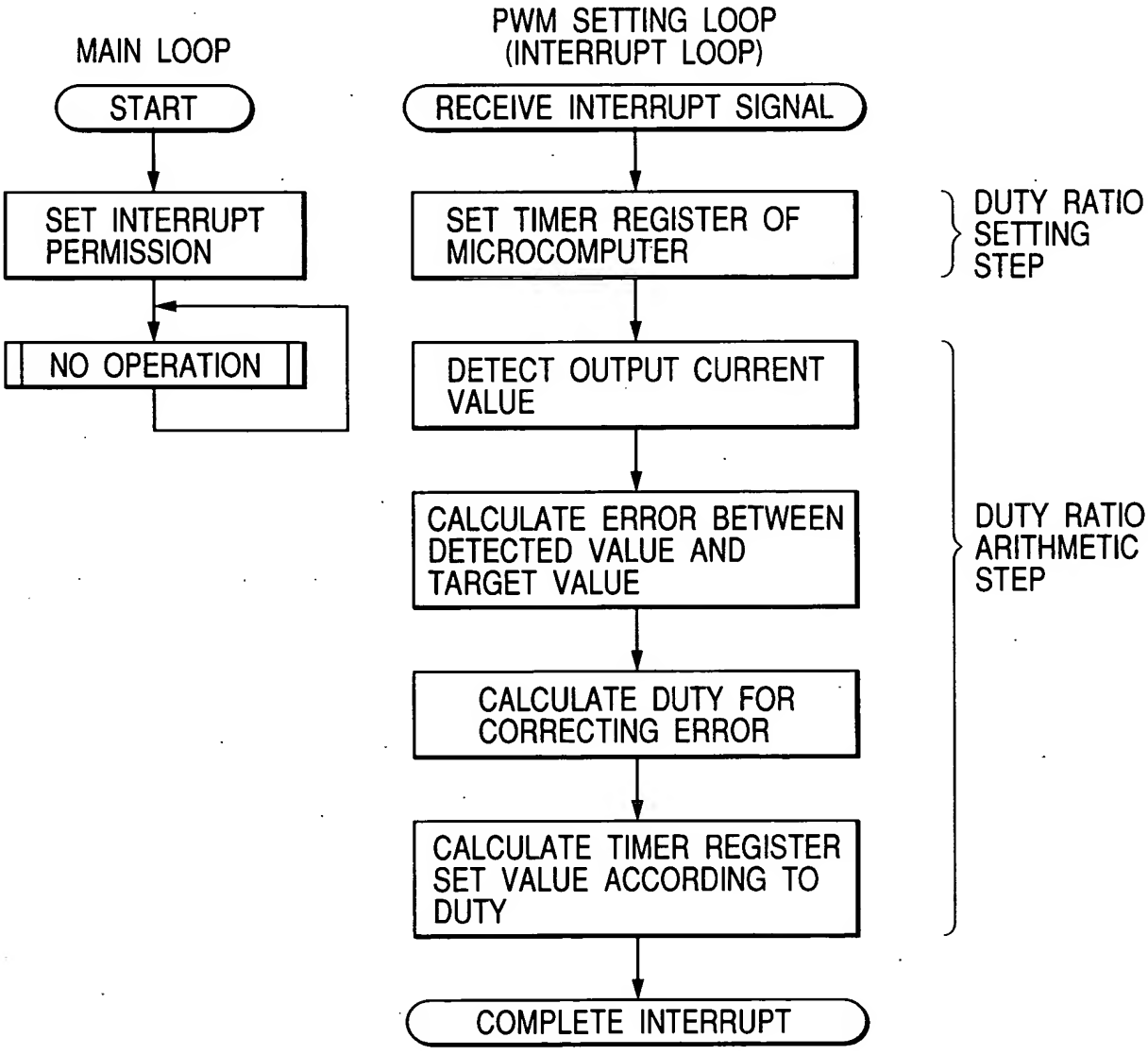

MAIN LOOP
START
SET INTERRUPT PERMISSION
NO OPERATION
PWM SETTING LOOP (INTERRUPT LOOP)
RECEIVE INTERRUPT SIGNAL
SET TIMER REGISTER OF MICROCOMPUTER
DETECT OUTPUT CURRENT VALUE
CALCULATE ERROR BETWEEN DETECTED VALUE AND TARGET VALUE
CALCULATE DUTY FOR CORRECTING ERROR
CALCULATE TIMER REGISTER SET VALUE ACCORDING TO DUTY
COMPLETE INTERRUPT
DUTY RATIO SETTING STEP
DUTY RATIO ARITHMETIC STEP

FIG. 2

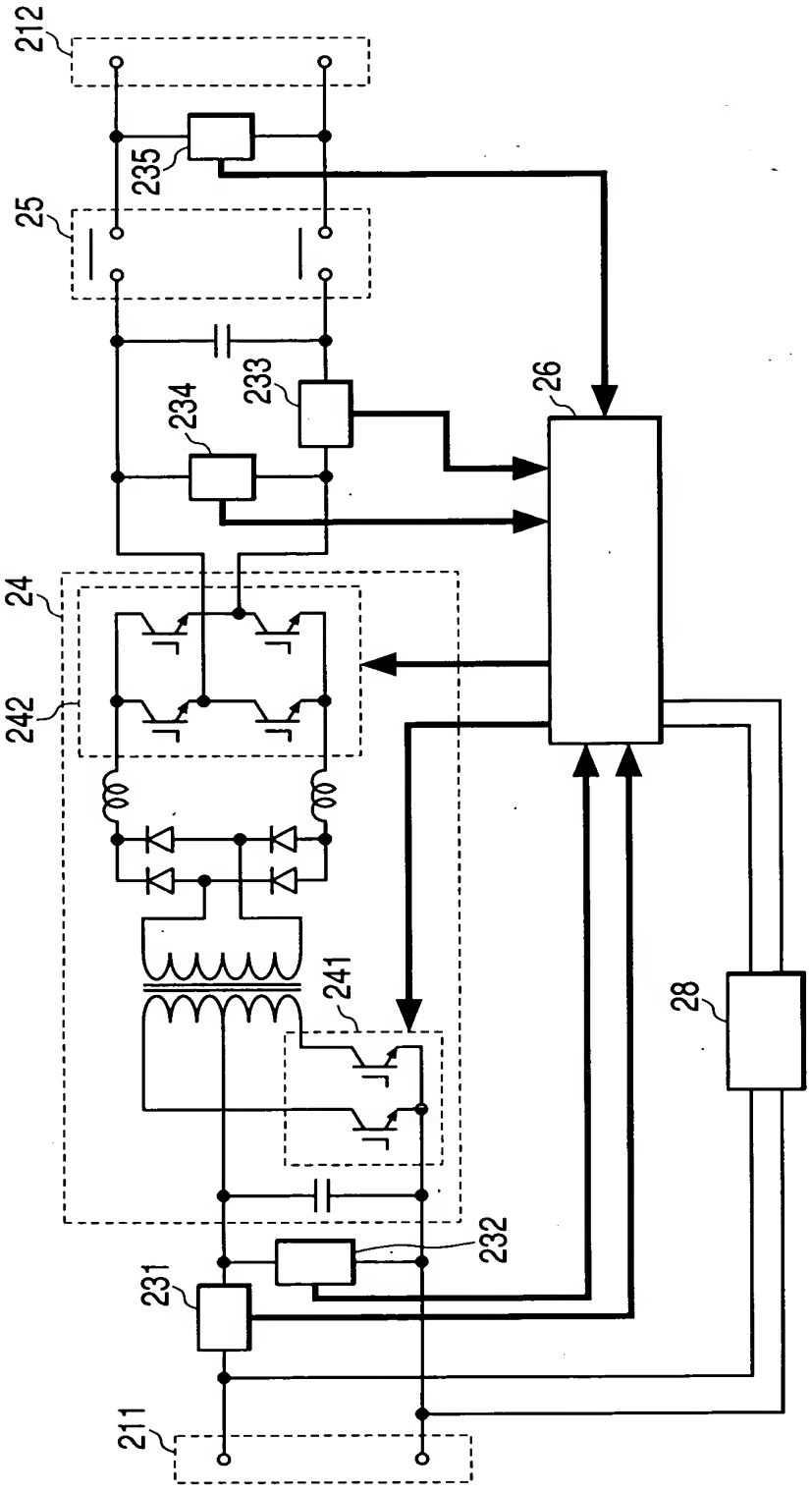


FIG. 3

| I/O TERMINAL / TIMER REGISTER | S1 TERMINAL | S2 TERMINAL |
|---|---|---|
| TIMR1 | HIGH | — |
| TIMR2 | LOW | — |
| TIMR3 | — | HIGH |
| TIMR4 | — | LOW |

FIG. 4

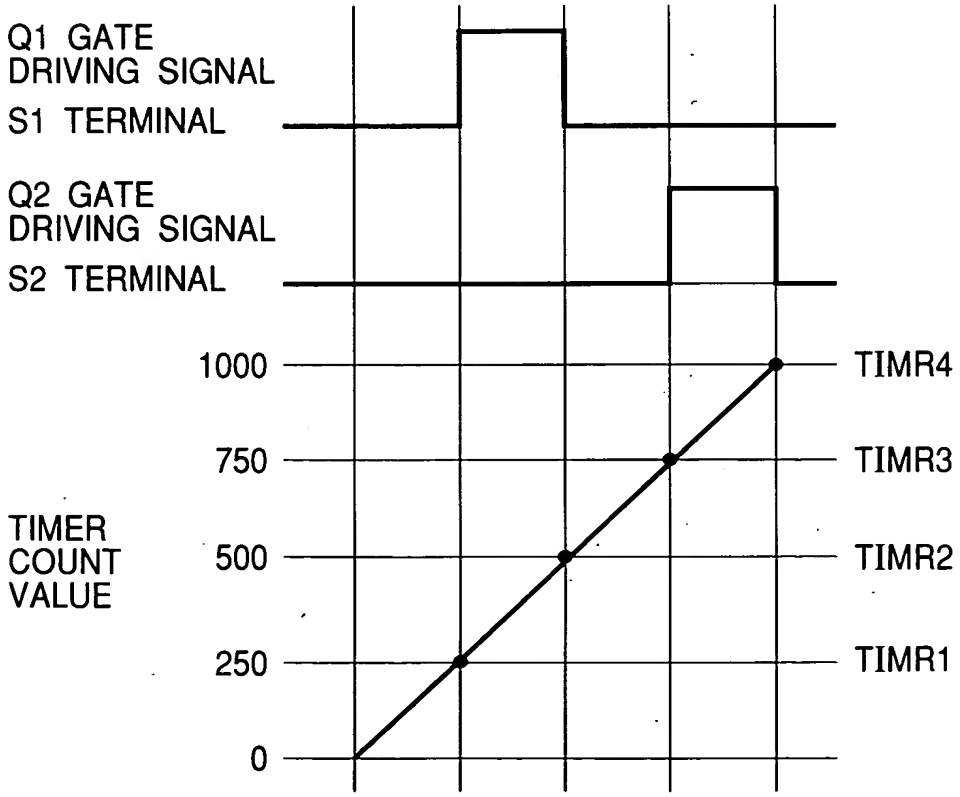


FIG. 5

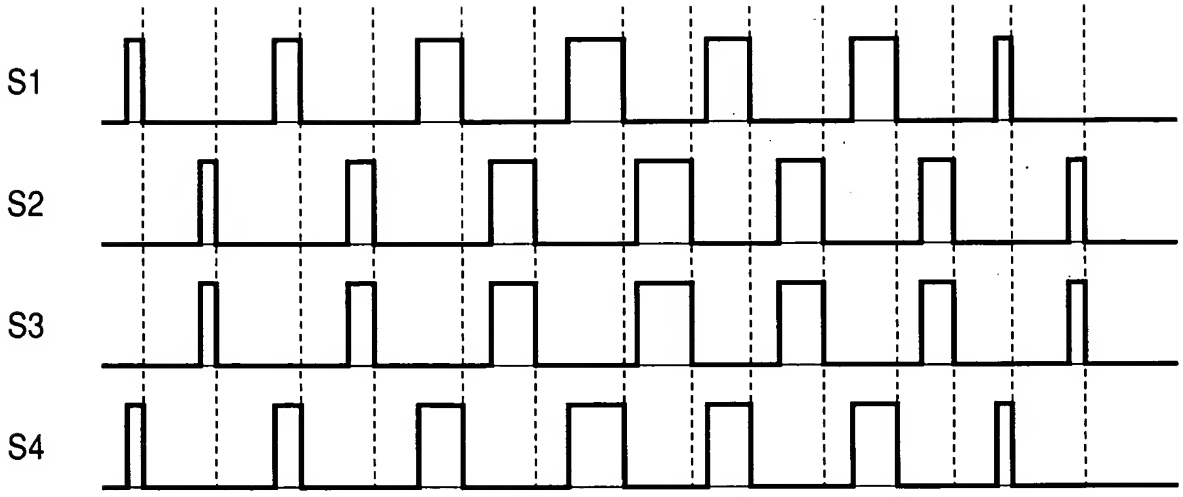



FIG. 6

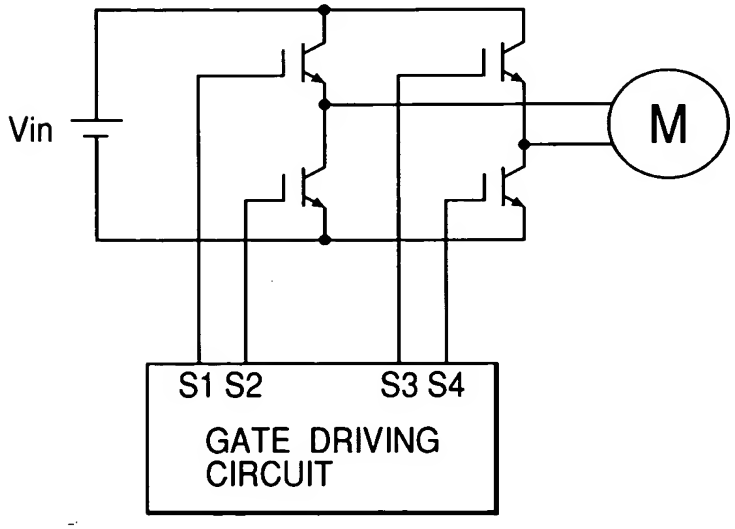


FIG. 7

| | SET VALUE IN PREVIOUS INTERRUPT PERIOD | CURRENT SET VALUE |
|---|---|---|
| TIMR1 | 350 | 200 |
| TIMR2 | 500 | 500 |
| TIMR3 | 850 | 700 |
| TIMR4 | 1000 | 1000 |
| SET DUTY | 30% | 60% |

FIG. 8

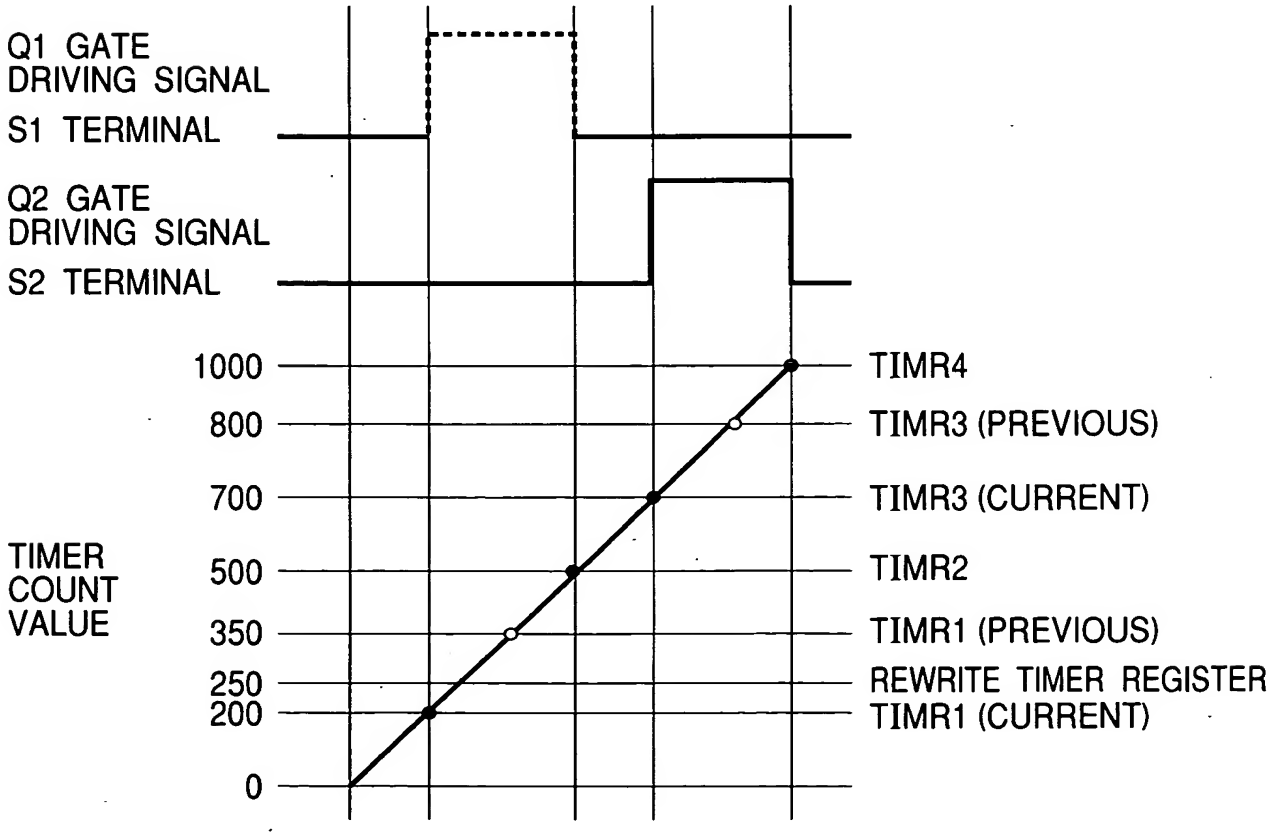


FIG. 9

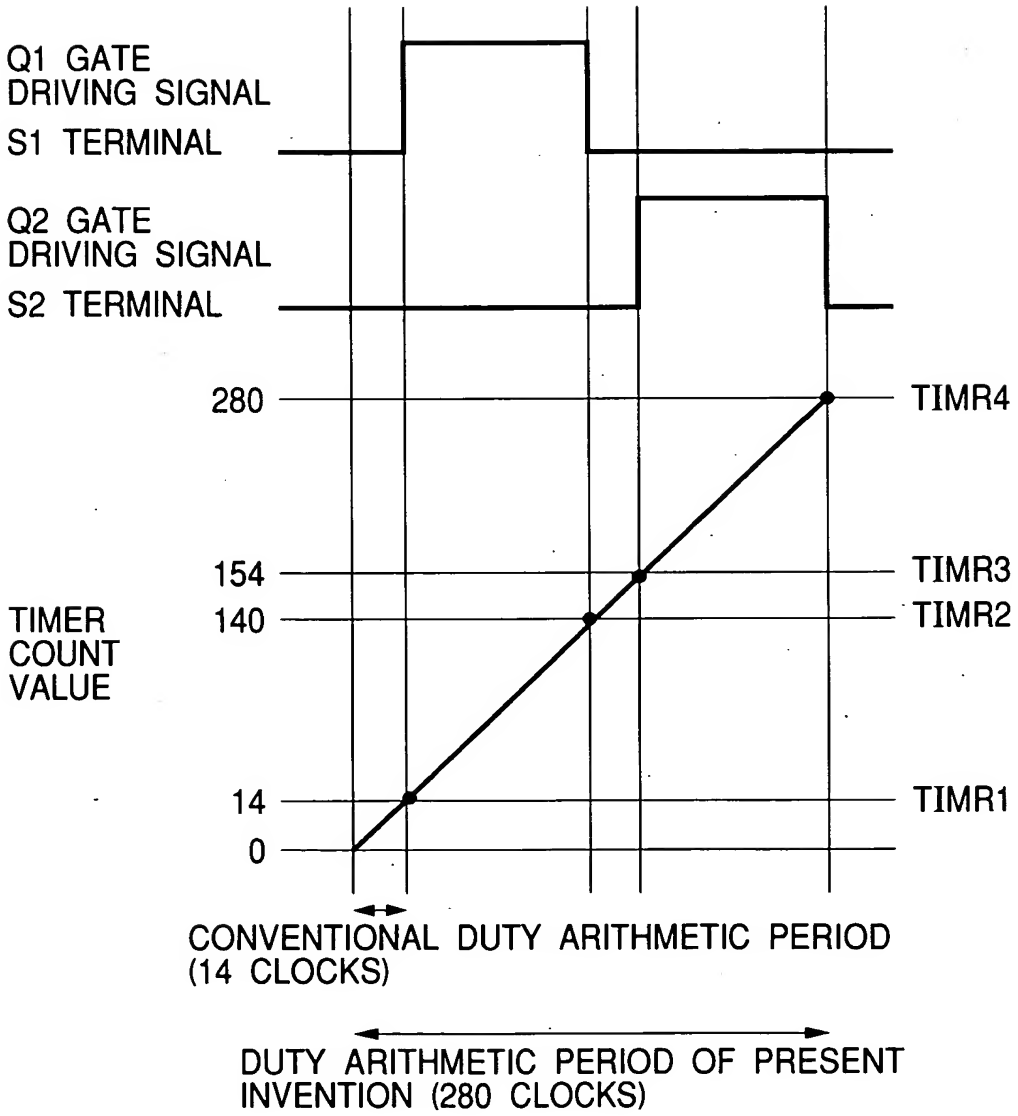

Q1 GATE
DRIVING SIGNAL
S1 TERMINAL
Q2 GATE
DRIVING SIGNAL
S2 TERMINAL
280
154
140
14
0
TIMER
COUNT
VALUE
TIMR4
TIMR3
TIMR2
TIMR1
CONVENTIONAL DUTY ARITHMETIC PERIOD
(14 CLOCKS)
DUTY ARITHMETIC PERIOD OF PRESENT
INVENTION (280 CLOCKS)

FIG. 10

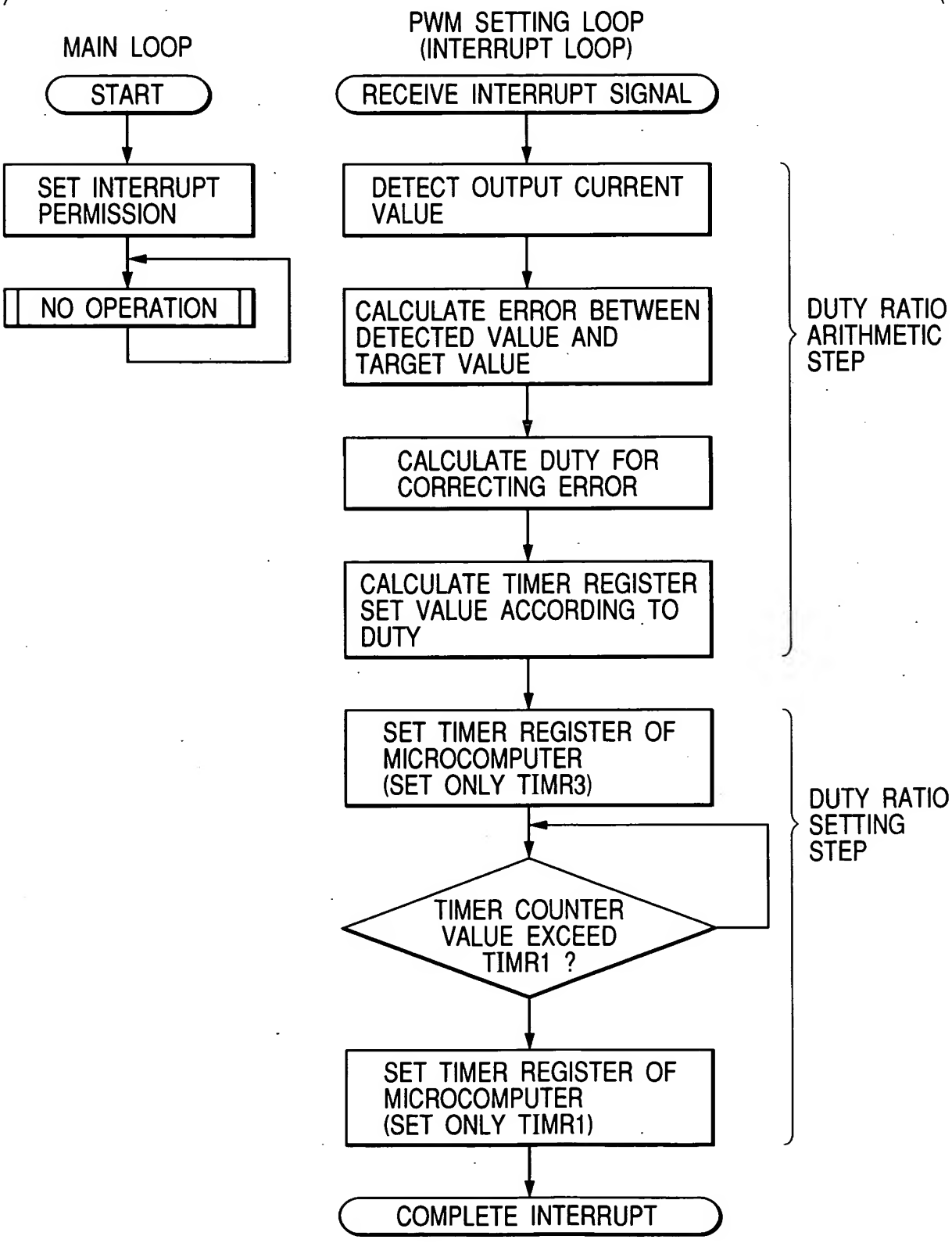

MAIN LOOP
START
SET INTERRUPT PERMISSION
NO OPERATION
PWM SETTING LOOP (INTERRUPT LOOP)
RECEIVE INTERRUPT SIGNAL
DETECT OUTPUT CURRENT VALUE
CALCULATE ERROR BETWEEN DETECTED VALUE AND TARGET VALUE
CALCULATE DUTY FOR CORRECTING ERROR
CALCULATE TIMER REGISTER SET VALUE ACCORDING TO DUTY
DUTY RATIO ARITHMETIC STEP
SET TIMER REGISTER OF MICROCOMPUTER (SET ONLY TIMR3)
TIMER COUNTER VALUE EXCEED TIMR1 ?
SET TIMER REGISTER OF MICROCOMPUTER (SET ONLY TIMR1)
DUTY RATIO SETTING STEP
COMPLETE INTERRUPT

FIG. 11

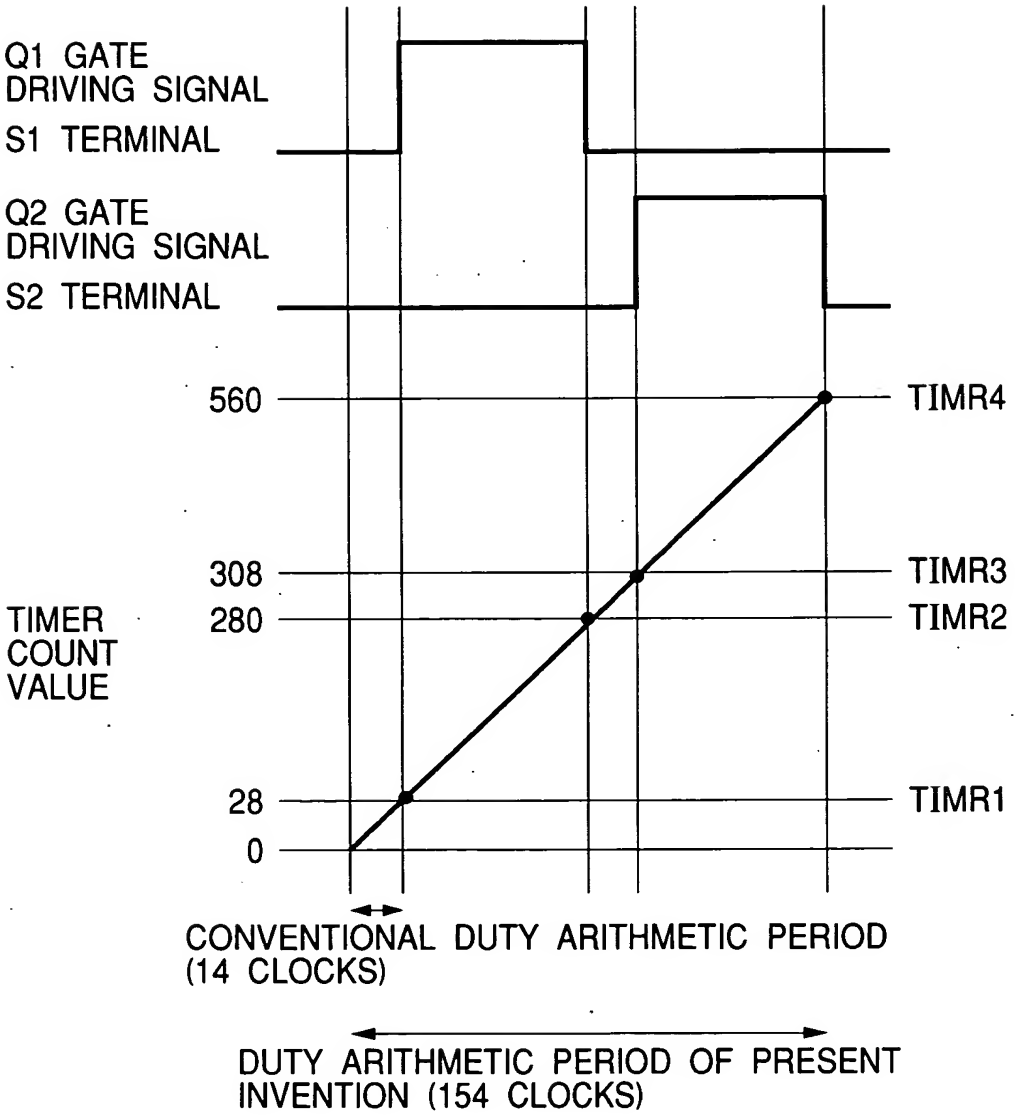

Q1 GATE DRIVING SIGNAL
S1 TERMINAL
Q2 GATE DRIVING SIGNAL
S2 TERMINAL
560
308
280
28
0
TIMER COUNT VALUE
TIMR4
TIMR3
TIMR2
TIMR1
CONVENTIONAL DUTY ARITHMETIC PERIOD (14 CLOCKS)
DUTY ARITHMETIC PERIOD OF PRESENT INVENTION (154 CLOCKS)

FIG. 12

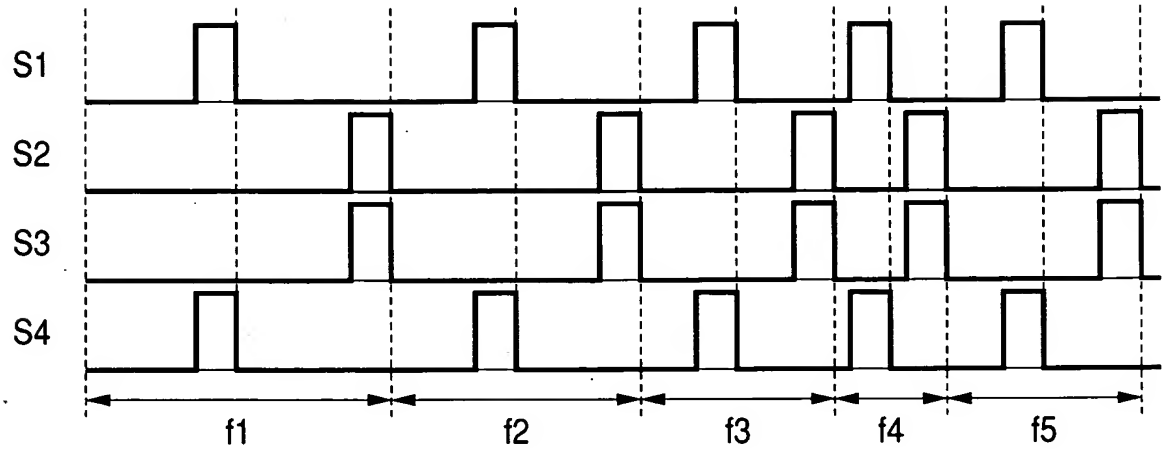
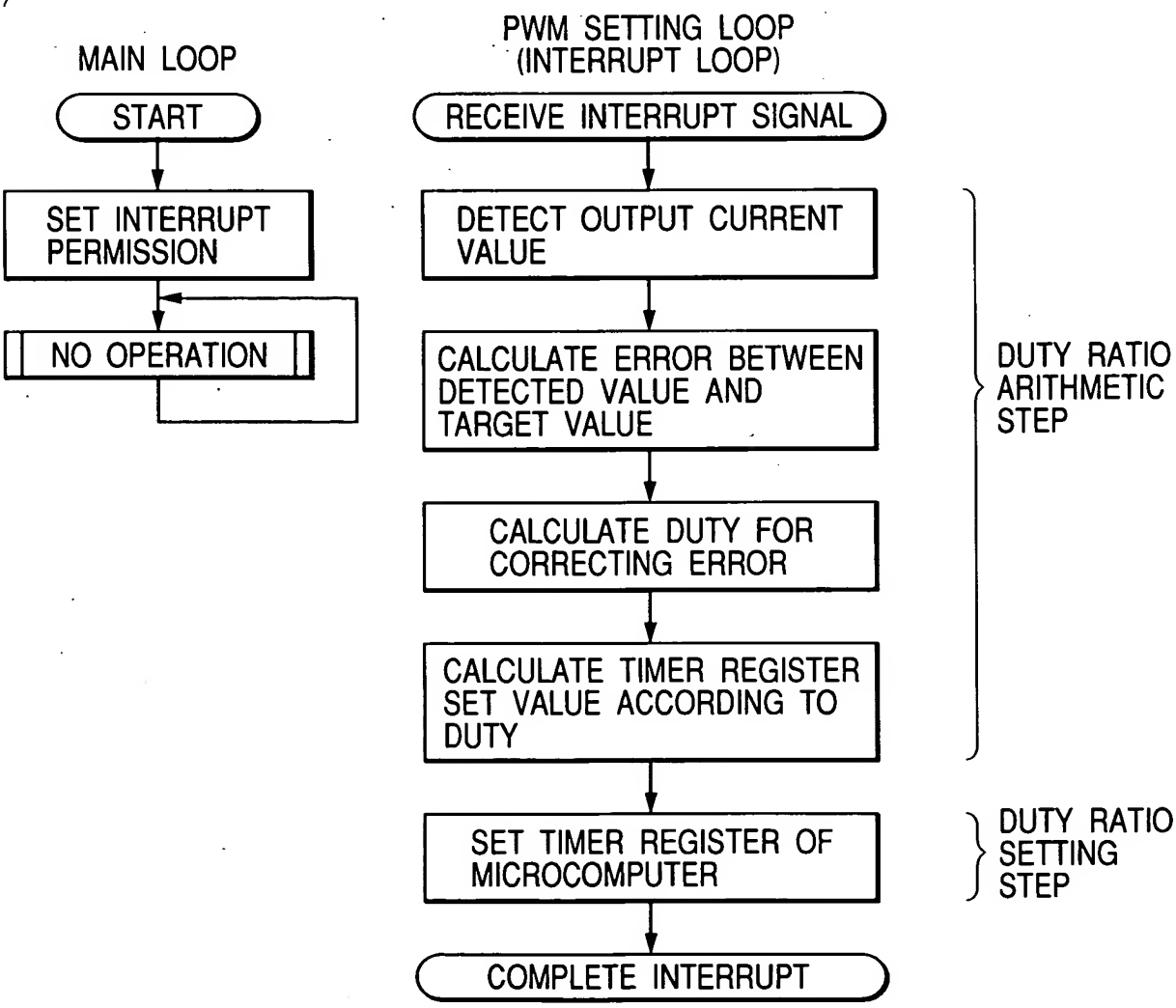

S1
S2
S3
S4
f1
f2
f3
f4
f5

FIG. 13


MAIN LOOP
START
SET INTERRUPT PERMISSION
NO OPERATION
PWM SETTING LOOP (INTERRUPT LOOP)
RECEIVE INTERRUPT SIGNAL
DETECT OUTPUT CURRENT VALUE
CALCULATE ERROR BETWEEN DETECTED VALUE AND TARGET VALUE
CALCULATE DUTY FOR CORRECTING ERROR
CALCULATE TIMER REGISTER SET VALUE ACCORDING TO DUTY
SET TIMER REGISTER OF MICROCOMPUTER
COMPLETE INTERRUPT
DUTY RATIO ARITHMETIC STEP
DUTY RATIO SETTING STEP